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THE TAXONOMIC STATUS OF *SESARMA FESTAE* NOBILI, 1901, *S. OPHIODERMA* NOBILI, 1901, AND *S. BIOLLEYI* RATHBUN, 1906 (CRUSTACEA, DECAPODA, GRAPSIDAE) IN THE EASTERN PACIFIC

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There are 38 nominal species of the grapsid crab genus *Sesarma* reported from the Americas. Rathbun (1918) considered 27 of these to be valid although she had not examined material of all species. This report is based on an examination of type material and is a contribution towards a review of the American species of *Sesarma*. It is concluded that *S. festae* and *S. biolleyi* are junior synonyms of *S. occidentale* Smith, 1870 and that *S. ophioderma* is a junior synonym of *S. angustum* Smith, 1870.

Serene and Soh (1970), in a review of some Indo-Pacific Sesarminae, proposed that the genus *Sesarma* be subdivided into a number of smaller genera. With reference to the American fauna this would mean recognition of the subgenera *Sesarma* and *Holometopus* at the generic level. The character they used to separate *Holometopus* and *Sesarma*, however, is variable (Abele, 1975:51). Since their proposal, Hagan (in press) has presented morphological, behavioral and ecological data which suggest that there are at least 2 groups of species among the American *Sesarma* fauna; these correspond to the subgenera *Sesarma* and *Holometopus* and will be recognized as such in the present report.

A series of measurements were taken on the species (Tables 1 and 2) which included a size range of both sexes. The

following abbreviations are used: *cl*, carapace length taken at midline; *cb*, carapace breadth at midlength; *iw*, the width of the frontal region at the distal margin; *aw*, abdominal width measured at the proximal margin of the sixth abdominal segment; *al*, abdomen length measured with the abdomen pressed against the sternum; *rcl*, *rch*, *rcw* and *lcl*, *lch*, *lcw* refer to the length, height and width of the right and left chelae; *ml*, *mw*, the merus length and width; *c*, carpus length; (maximum length along the extensor margin); *p*, propodus length; *ps*, propodal spines that occur on the ventral border and distal margin, e.g., a formula of 10 + 2 indicates 10 pairs (separated) of spines on the ventral border and 2 on the distal border; *d*, dactylus length; *ds*, dactylus spines that occur in two poorly defined rows on the dorsal and ventral borders, e.g., a formula of 4/3 indicates 2 dorsal rows of 4 spines each and 2 ventral rows of 3 spines each. YPMNH refers to the Yale Peabody Museum of Natural History and USNM refers to the National Museum of Natural History, Smithsonian Institution.

Sesarma (*Holometopus*) *occidentale* Smith, 1870
Figures 1, 2, 3a–3h

Sesarma occidentalis Smith, 1870: 158 (type-locality Acajutla, El Salvador).

Sesarma (*Holometopus*) *occidentalis*: Nobili, 1901: 42.

S. (*Holometopus*) *Festae* Nobili, 1901: 42 (type-locality Tumaco, Colombia).

Sesarma (*Holometopus*) *biolleyi* Rathbun, 1906: 100 (type-locality Salinas de Caldera, Boca del Jesus Maria, Costa Rica).

Sesarma (*Holometopus*) *occidentale*: Rathbun, 1918: 299, fig. 148.

Sesarma (*Holometopus*) *biolleyi*: Rathbun, 1918: 306, fig. 150, pl. 87, figs. 2, 3.

Sesarma (*Holometopus*) *festae*: Rathbun, 1918: 313.

Sesarma (*Holometopus*) *occidentalis*: Bott, 1955: 63.

Material examined (Coll. no. refers to specimens listed in Table 1): Ecuador, Esmeraldas; 3♀ (Coll. no. 5) (syntypes of *S. festae*), E. Festa coll.; Turin Museum Cr 198.

Colombia, Tumaco; 3♂ 4♀ (Coll. no. 3) (syntypes of *S. festae*), E. Festa coll.; Turin Museum Cr 91.

Panama, Pacific coast, Naos Island; 4♂, 3♀ (Coll. no. 2); 10 June 1969; L. G. Abele coll.—Albrook Air Force Base, swamp; 1♂ (18 June 1974); 3♂, 6♀ (Coll. no. 4) (23 August 1972); 3♀ (6 December 1968); 2♂ (6 May 1969); L. G. Abele coll.—Pearl Islands, Mina Island

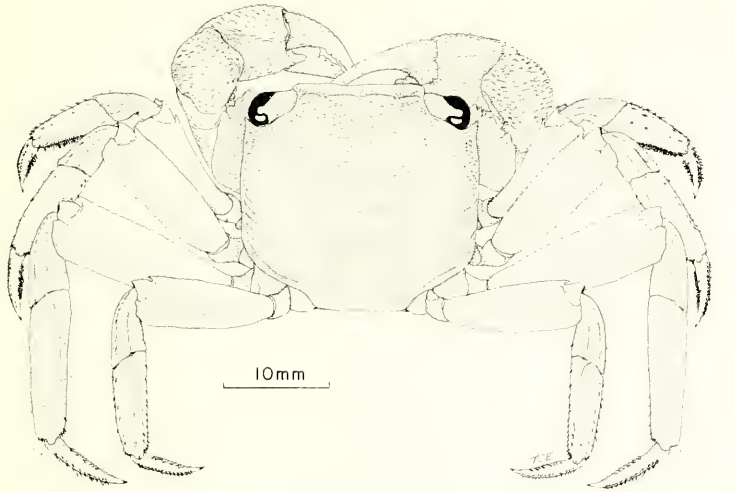

Fig. 1. *Sesarma biolleyi* Rathbun. Holotype male, USNM 32490.

mangrove swamp; 5♂ (Coll. no. 1) 13 June 1973; L. G. Abele coll.—Pearl Islands, Contadora Island mangrove swamp; 2♂, 3♀; 6 January 1973; L. G. Abele coll.—Rio Mar above beach; 1♂ 12 June 1969; L. G. Abele coll.

Costa Rica, Boca del Jesus Maria; 1♂ (holotype of *S. biolleyi*); January, 1906; P. Biolley and J. F. Tristan coll.; USNM 32490.

El Salvador, Acajutla; 2♂ (syntypes of *S. occidentale*); F. H. Bradley coll.; YPMNH.

Description: The carapace is slightly wider than long. The ratio *cl/cb* is 0.95 ± 0.02 in males and 0.93 ± 0.02 in females. The carapace increases in width posteriorly and there is a very slight emargination posterior to the outer orbital angle. The dorsal surface is covered with a series of low but distinct granules. The interorbital region is subdivided into 4 low lobes. The frontal region widens slightly distally, more apparent in larger specimens. At the widest point the frontal region is about 0.55 of the carapace width. The carapace is not inflated.

The eyes are well developed and pigmented.

The basal segment of the antennula is large, granulated and placed beneath the frontal margin. The basal antennal segment forms a part of the lower orbit as it fits up against a triangular lobe. A groove (Verwey's groove; Hagen, in press) extends from the exhalent opening along the pterygostomial region parallel to the lower orbital margin; a weaker groove runs at an oblique angle from each end of Verwey's groove delimiting a triangular area below the orbit.

The third maxillipeds do not meet and each has an oblique row of pubescence on the segment proximal to the palp.

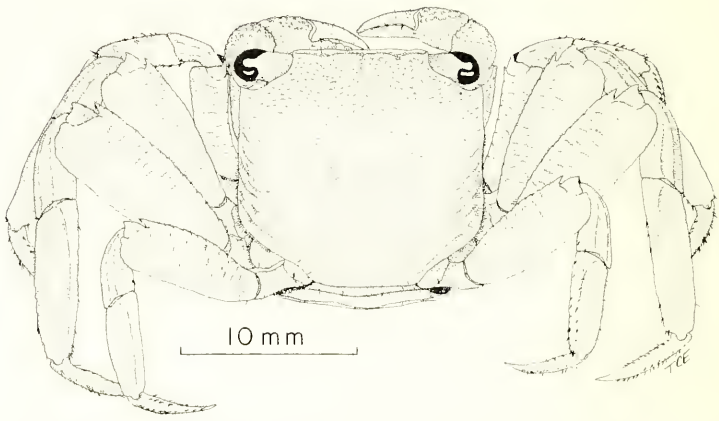

Fig. 2. *Sesarma festae* Nobili. Syntype ovigerous female, Turin Museum 91.

The chelipeds are sexually dimorphic. In both sexes the merus has the medial posterior edge serrated; the anterior edge is expanded with well developed teeth (especially in mature males). The carpus is covered with acute granules, especially along the borders. The chelae of both sexes are covered with acute tubercles; in males the chelae are swollen and there is a large process or protuberance on the medial surface of the palm at the base of the dactylus. The dactylus is broader at its base in males compared to females.

The walking legs are long and relatively slender; they are in order of increasing length: first, fourth, second and third. The ratio of merus length to width varies among the legs and with the size and sex of the animal. For example, the ratio of the fourth leg (fifth pereiopod) of small males is about 2.5 while for the third leg of large males it is 3.0. For a series of males (Table 1) the ratio of the third (longest) leg ranged from 2.6 to 3.0; in females it ranged from 2.6 to 2.9. The ratio becomes larger with increasing size in both sexes. In the longest leg (the third), the merus length is slightly less than twice the carpus length; about 1.3 times the propodus length and slightly less than twice the dactylus length. Mature males have a row of thick pubescence along the ventral part of the propodus and dactylus; there is also pubescence along the dorsal part of the propodus but the hairs are more robust. The propodi and dactyli are armed with small, black spines; on the ventral margin of the propodus and on both the ventral and dorsal margins of the dactylus. Some data are presented in Table 1. There are about 5 spines in widely separated pairs along the ventral part of the propodus with 2 more pairs on the distal margin. The spines of the dactylus are in 2 poorly defined rows on the dorsal and ventral surfaces. The number

TABLE 1. Morphological measurements of *Sesarma occidentale* Smith, 1870.

											Fourth Pereiopod							Fifth Pereiopod							Coll.
cl	*cb*	*iw*	*aw*	*al*	*rcl*	*rch*	*rcw*	*lcl*	*lch*	*lcw*	*ml*	*mw*	*c*	*p*	*ps*	*d*	*ds*	*ml*	*mw*	*c*	*p*	*ps*	*d*	*ds*	no.
Males																									
7.1	7.3	4.1	2.3	3.8	3.7	1.8	1.1	3.7	1.8	1.1	6.9	2.5	3.6	5.4	6+2	3.8	3/5	4.2	1.6	2.3	2.8	4+1	2.5	2/3	3
7.8	8.4	4.5	2.5	4.0	4.3	2.0	1.3	4.3	2.2	1.3	6.0	2.1	3.3	4.7	3+1	3.3	2/4	4.6	1.8	2.5	3.3	8+0	2.7	4/3	3
7.9	8.4	4.5	2.6	4.1	4.4	2.3	1.3	4.4	2.4	1.3	6.8	2.3	3.6	5.2	2+2	3.6	4/3	4.3	1.8	2.5	3.3	7+1	2.8	5/3	2
8.3	8.8	4.4	2.4	4.1	4.6	2.3	1.5	4.6	2.5	1.6	7.8	2.8	3.8	5.8	1+2	3.9	2/4	5.0	2.1	2.7	3.6	2+1	2.9	4/3	2
9.0	9.4	5.0	2.9	4.7	4.8	2.8	1.8	4.8	3.0	1.8	7.7	2.8	3.9	5.6	6+3	4.0	3/6	4.9	2.1	2.8	3.7	6+2	2.8	5/3	1
10.5	11.1	6.2	3.4	6.2	6.1	3.8	2.3	5.8	3.7	2.4	8.8	3.2	4.5	6.3	5+2	4.8	6/4	6.2	2.6	3.8	4.4	7+2	3.8	8/3	1
10.6	11.2	6.9	4.0	6.2	7.2	4.2	2.8	7.5	4.2	2.6	8.8	3.0	4.5	6.7	2+2	4.5	6/7	7.7	3.0	4.4	5.5	6+2	4.0	4/3	1
13.0	13.3	7.4	4.5	6.7	8.0	4.8	3.2	7.9	4.8	3.0	10.5	4.0	5.7	8.3	2+3	5.5	8/5	7.7	3.2	4.5	5.8	10+3	4.3	12/5	1
13.4	14.2	7.8	4.8	7.4	8.7	5.0	3.4	8.7	5.0	3.5	11.8	4.0	6.0	9.7	2+3	6.0	5/5	8.3	3.2	5.0	6.5	8+2	4.9	6/5	2
14.9	15.3	8.8	4.9	7.5	10.1	6.0	4.3	9.0	4.7	3.2	12.7	4.3	6.8	10.0	1+3	6.5	8/7	9.3	3.5	5.6	7.0	9+2	5.3	14/5	1
Females																									
6.7	7.3	3.8	2.4	3.7	3.4	1.7	1.0	3.4	1.6	1.0	6.0	2.1	3.2	4.7	4+1	3.3	0/5	4.0	1.6	2.3	2.9	5+1	2.3	0/3	3
8.8	9.8	5.2	5.7	5.4	4.8	2.3	1.5	4.8	2.3	1.6	8.0	2.9	4.0	6.3	1+2	4.2	1/3	5.4	2.2	3.0	3.8	4+2	3.0	2/3	4
9.3*	10.2	5.6	6.8	5.7	5.3	2.6	1.7	5.2	2.6	1.7	8.4	3.0	4.4	6.5	2+2	4.2	3/3	5.8	2.3	3.3	4.2	6+2	3.3	5/3	4
9.3*	10.1	5.4	5.7	5.6	4.8	2.5	1.4	4.8	2.5	1.5	8.0	3.1	4.3	6.4	0+2	4.2	2/3	5.5	2.3	3.3	3.9	5+0	3.3	3/3	4
9.7	10.3	5.4	4.9	4.7	4.9	2.6	1.6	5.0	2.4	1.7	8.6	3.1	4.2	6.5	1+1	4.4	2/4	5.7	2.3	3.2	4.1	4+1	3.2	3/3	4
11.2	12.0	6.8	8.2	7.0	5.0	2.6	1.6	6.0	3.2	1.9	12.0	3.5	5.1	7.6	4+2	5.1	5/5	6.3	2.6	3.9	4.8	9+2	3.8	6/5	5
14.0*	14.8	8.7	9.5	7.3	8.0	4.3	2.6	8.0	4.3	2.7	12.0	4.5	6.2	9.7	3+2	6.0	5/6	8.5	3.6	5.4	6.8	9+2	5.2	13/3	3
14.2	15.0	8.0	10.5	9.2	7.9	4.2	2.7	7.9	4.1	2.6	12.2	4.5	6.5	9.7	2+3	6.0	4/4	8.8	3.6	5.1	6.7	7+1	4.8	9/4	4

* = ovigerous individual.

and strength of the spines increase with increasing size. The spines are present in females also but are reduced in number compared to males.

The male abdomen is subtriangular in outline; the length and breadth of the telson are subequal. The female abdomen is subcircular in outline.

The male gonopod is simple and unarmed. The endpiece (amber-colored apex) is relatively small and set at an oblique angle to the main axis of the gonopod. The gonopod has a distinct expanded part proximal to the endpiece.

The female gonopore is raised from the sternum and flanked anteriorly and posteriorly by extensions of the sternum; between these is a barbell-shaped process.

Measurements: Males, *cb* 7.3 to 22.0 mm; females, *cb* 7.3 to 15.0 mm; ovigerous females, *cb* 10.1 to 14.8 mm. Males larger than about *cb* 11.0 mm appear to be mature while females appear to attain sexual maturity at about *cb* 10.0 mm.

Type-locality: Acajutla, El Salvador.

Distribution: The species is widely distributed in the eastern Pacific from Esmeraldas, Ecuador to at least Acajutla, El Salvador.

Habitat: *Sesarma occidentale* is semi-terrestrial and occurs in a wide variety of habitats up to 80 m from water. Individuals were collected from under litter along the edge of a brackish water stream, from a dried river bed along the edge of a red mangrove swamp and from among piles of lumber in back of the bunker of the Smithsonian Tropical Research Institute at Naos Island, Panama.

Remarks: Type-materials of *Sesarma occidentale* Smith, 1870, *S. festae* Nobili, 1901 and *S. biolleyi* Rathbun, 1906 were examined and in the author's opinion they are conspecific. Bott (1955) had previously suggested that *S. biolleyi* might be a synonym of *S. occidentale* but he had not examined any type-material. The material of *S. occidentale* consists of 2 males in the YPMNH (PMN 545; *cb* 17.6 and 13.1 mm). Although Rathbun (1918:300) indicated that the larger specimen is a holotype there is no indication of this in the jar. The material of *S. festae* consists of 2 lots; 3 females from Esmeraldas, Ecuador (Cr. 198, Turin Museum) and 3 males and 4 females (not 4 males and 3 females as stated by Nobili, 1901:42) from Tumaco, Colombia (Cr. 91, Turin Museum). The latter material is indicated by the label to be the type-material and I therefore restrict the type-locality to Tumaco. The material of *S. biolleyi* consists of a large holotype male (*cb* 20.2 mm, USNM 32490) from Salinas de Caldera, Boca del Jesus Maria, Costa Rica.

There are clear differences among type-materials of the 3 nominal species but these are due, I believe, to differences in size. The morphological differences listed by Rathbun (1918) in her key are: (1) the frontal region does not widen distally in *S. festae* while it does widen in *S. occidentale* and *S. biolleyi*, and (2) the merus of the third leg in *S. biolleyi* has the length about 3 times the width while it is less than 3 times the width in *S. occidentale*. There are also some differences between *S. festae* from Ecuador and *S. occidentale* from Panama in the

strength of the tubercles on the chelae; the former having stronger tubercles. The differences in the form of the front and in the length-width ratio of the merus are size related. Small specimens have relatively wider legs and a front that does not widen distinctly distally; specimens in a range of sizes from a single locality will contain individuals which bridge the differences listed by Rathbun (1918). The differences in strength of the tubercles seem to depend on the stage of the molt cycle. Newly molted individuals seem to have more acute tubercles than individuals that appear ready to molt.

Sesarma (*Holometopus*) *angustum* Smith, 1870
Figures 3i–3m, 4, 5

Sesarma angusta Smith, 1870: 159 (type-locality Pearl Islands, Panama).
S. (*Sesarma*) *ophioderma* Nobili, 1901: 44 (type-locality Esmeraldas, Ecuador).
Sesarma (*Sesarma*) *ophioderma*: Rathbun, 1918: 297.
Sesarma (*Holometopus*) *angustum*: Rathbun, 1918: 314, pl. 92.
Sesarma angustum: Holthuis, 1954: 37.
Sesarma (*Holometopus*) *angustum*: Bott, 1955: 64, fig. 5.

Material examined (Coll. no. refers to specimens listed in Table 2):
Ecuador, Esmeraldas; 1 ♀ (Coll. no. 10) (Holotype of S. *ophioderma*) E. Festa coll.; Turin Museum C r 138.

Panama, Pearl Islands; 8 ♂, 3 ♀ (Coll. no. 7), Rey Island; 3 February 1973; L. G. Abele coll.—1 ♂, 1 ♀ (Coll. no. 8), Canas Island; 18 May 1973; L. G. Abele coll.—6 ♂, 10 ♀ (Coll. no. 9), Senora Island; 30 January 1971; L. G. Abele, T. A. Biffar coll.—9 ♂, 3 ♀, Saboga Island; 5 January 1973; L. G. Abele coll.—4 ♀, Mina Island; 13 June 1973; L. G. Abele, R. Dressler coll.—3 ♂, 1 ♀ (Coll. no. 6); Pacheca Island; 5 January 1973; L. G. Abele coll.—1 ♀; Pedro Gonzales Island; 13 June 1973; L. G. Abele, R. Dressler coll.—1 ♀ (Holotype of S. *angustum*, YPMNH); F. H. Bradley coll.—1 ♀ (Coll. no. 11); Chiriqui Province, Rio Tinta (3 mi west of Rio Tabasara on Sona-Remedios Road); 11 November 1961; H. L. Loftin, E. L. Tyson coll.

Costa Rica, Cocos Island; 1 ♂ (Coll. no. 12); 12 August 1973; L. G. Abele coll.

Description: The carapace is slightly longer at the midline than wide; the ratio *cl*/*cb* is 1.04 ± 0.03 in males and 1.00 ± 0.02 in females. The ratio is somewhat biased by taking the *cl* measurement at midline since the front is concave at that point and the carapace is actually longer on either side of the midline. Small males and especially females tend to have the *cl*/*cb* ratio closer to unity. The lateral margins of the carapace are about equidistant throughout their length; the outer orbital angle is acute with 2 distinct emarginations posterior to it. The dorsal surface of the carapace is covered with depressed granules that are subacute on the interorbital region. The interorbital region is subdivided into 4 lobes; a deep sinus separates the large and distinct submedian pair.

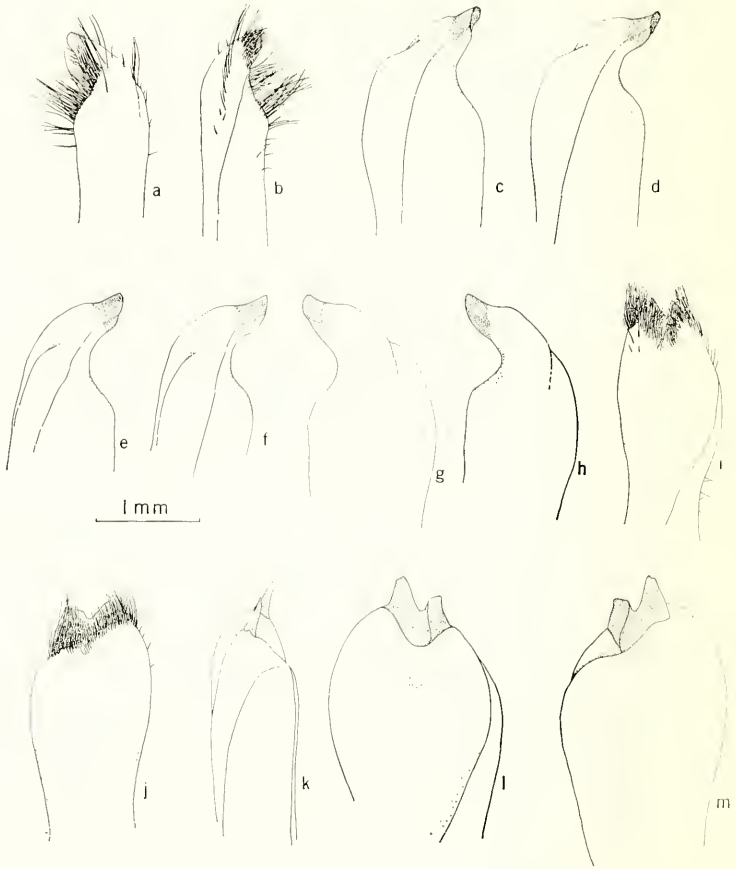

Fig. 3. Right male gonopods of *Sesarma*: a, Posterior view; b, Anterior view, S. *occidentale* from the Pearl Islands, Panama. c, Anterior view; e, Anterior view; g, Posterior view, holotype of S. *biolleyi*. d, Anterior view; f, Anterior view; h, Posterior view, holotype of S. *occidentale*. i, Anterior view; j, Posterior view; k, Lateral view; l, Anterior view; n, Posterior view, S. *angustum* from the Pearl Islands, Panama.

The lateral lobes are low with granules present. The frontal region is about 0.50 of the carapace breadth and distinctly concave; there is a median sinus, and 2 smaller lateral ones along the distal margin. The frontal region does not increase in width distally. The carapace is not inflated.

The eyes are well developed and pigmented.

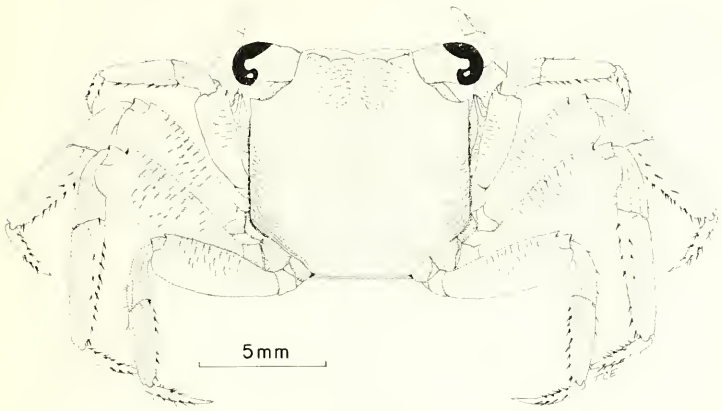

FIG. 4. *Sesarma ophioderma* Nobili. Holotype female, Turin Museum 138.

The basal antennular segment is swollen, granulated and placed beneath the frontal margin. The basal antennal segment arises at the lateral part of the antennula and forms part of the lower orbit fitting up against a narrow triangular lobe. A groove (Verwey's groove; Hagen, in press) extends from the exhalent opening along the pterygostomial region to about the posterior margin of the orbit. An oblique groove extends from each end of Verwey's groove meeting beneath it and forming a wide triangular region.

The third maxillipeds do not meet and each has an oblique row of pubescence on the segment proximal to the palp.

The chelipeds are sexually dimorphic; in general, male chelipeds are more robust than females. In both sexes, the medial posterior edge and the lateral inferior edge of the merus are serrated. The medial anterior border is armed with teeth and expanded distally, especially in males. The carpus is covered with acute granules. The chelae of both sexes are covered with granules; they tend to be low on the lateral surface but acute on the medial surface and margins and on the dorsal surface of the movable finger. The dorsal surface of the palm has a poorly defined row of acute tubercles. Males tend to have 4 teeth on the immovable finger and 5 teeth on the movable one; the tips are somewhat spooned but do not meet evenly. Females tend to have 5 teeth on the immovable and 6 on the movable finger; the tips are spooned and fit evenly together.

The walking legs are long and relatively slender; in order of increasing length they are: first, fourth, second and third. The merus length to width ratio of the third ranges from 2.50 to 3.0 (2.78 ± 0.14); the ratio increases with increasing size and is greater in males than females (Table 2). The merus is slightly less than twice of the length of the carpus,

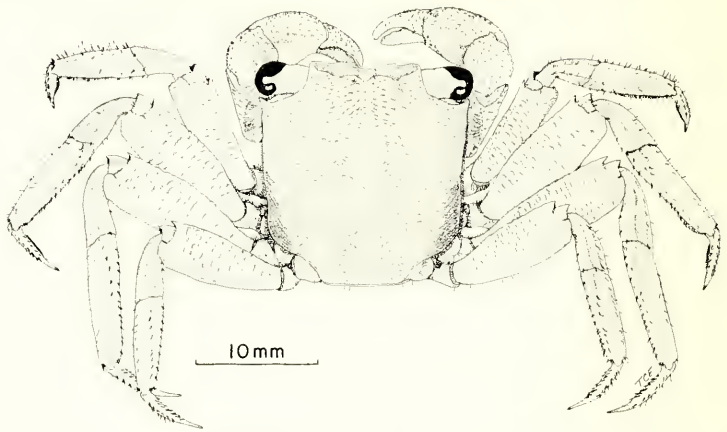

Fig. 5. *Sesarma angustum* Smith. Male from Pearl Islands, Panama.

about 1.3 times the length of the propodus and about twice as long as the dactylus. There is thick, dark pubescence along the ventral border of the propodus and dactylus of the first and second walking legs of males; it is absent in females. The propodi and dactyli of the walking legs are armed with small, black spines; on the ventral margin of the propodus and on both margins of the dactylus. Some data are presented in Table 2. For the propodus, 10 + 2 indicates that 10 spines, each a member of a separated pair, are on the ventral border and there are 2 paired spines on the distal margin. For the dactylus, 4/3 indicates that there are 2 poorly defined dorsal rows of 4 spines each and 2 poorly defined ventral rows of 3 spines each.

The male abdomen is subtriangular in outline; the length of the telson is slightly greater than the width. The female abdomen is semicircular in outline.

The male gonopod is quite different from other American species of *Sesarma* in that parts of the shaft are membranous or weakly calcified. The laterally compressed, amber-colored endpiece consists of 2 unequal lobes dorsoventrally separated by a large sinus.

The female gonopore is set deep in the sternum; there are anterior and posterior extensions that enclose the medial part.

Measurements: Males, *cb* 4.9 to 20.9 mm; females, *cb* 7.5 to 17.8 mm. Males larger than about 11.0 mm appear to be sexually mature while females appear to attain sexual maturity at about 12.0 m. No ovigerous females were observed during the present study.

Type-locality: Pearl Islands, Gulf of Panama, Panama.

Distribution: This species has been reported from El Salvador, Costa Rica, Panama and Ecuador.

TABLE 2. Morphological measurements of *Sesarma augustum* Smith, 1870.

											Fourth Pereiopod							Fifth Pereiopod							Coll.
cl	*cb*	*iw*	*aw*	*al*	*rcl*	*rch*	*rcw*	*lcl*	*lch*	*lcw*	*ml*	*mw*	*c*	*p*	*ps*	*d*	*ds*	*ml*	*mw*	*c*	*p*	*ps*	*d*	*ds*	no.
Males																									
4.9	4.9	2.3	1.4	2.9	2.3	1.0	0.7	2.4	1.0	0.7	3.9	1.4	2.0	2.9	4+1	2.0	4/3	2.9	1.0	1.0	2.1	3+2	1.8	1/2	6
8.2	7.9	4.0	2.5	4.8	3.8	1.8	1.2	3.9	1.8	1.1	6.3	2.5	3.3	4.8	4+1	3.0	2/4	4.8	1.9	2.5	3.3	4+1	2.7	3/3	9
8.9	8.7	4.3	2.8	4.5	4.3	2.1	1.4	4.2	2.1	1.4	6.8	2.6	3.6	5.0	9+2	3.3	2/3	5.3	2.1	2.9	3.5	4+2	2.8	2/4	9
9.1	9.0	4.7	2.9	5.0	4.5	2.1	1.5	4.4	2.1	1.3	7.7	2.8	3.8	5.9	10+2	3.8	3/4	6.0	2.2	3.5	4.3	7+2	3.3	3/3	8
12.5	11.8	6.1	4.3	7.7	7.2	3.8	2.6	7.7	3.9	2.7	10.2	3.6	5.3	8.2	10+1	5.2	2/4	7.7	2.8	4.5	6.0	8+0	4.5	4/6	7
14.1	13.2	7.0	4.7	8.1	8.4	4.5	3.2	8.0	4.5	3.0	11.5	3.8	6.0	9.0	10+2	5.5	4/5	8.9	3.4	5.0	6.7	9+2	4.8	5/6	7
16.3	15.9	8.3	5.3	9.7	10.0	6.1	4.3	10.1	4.3	6.3	–	–	–	–	–	–	–	10.0	3.5	5.8	7.8	8+2	5.7	5/6	7
17.7	16.1	9.1	5.8	10.1	12.2	6.8	4.4	11.3	6.5	4.4	13.5	4.7	6.5	11.0	10+2	6.7	4/6	10.6	4.0	6.7	8.5	10+2	6.0	7/9	7
18.9	18.3	9.9	6.3	11.3	12.9	7.3	5.0	11.7	6.0	4.3	13.5	4.7	6.5	11.0	12+2	6.5	8/5	11.5	4.3	6.5	9.1	7+2	5.5	7/5	7
21.4	20.9	10.2	6.7	11.4	12.3	6.7	4.7	15.0	9.3	6.0	15.8	5.7	7.8	12.1	11+3	7.3	4/4	13.0	5.0	7.6	10.3	9+2	7.4	9/7	12
Females																									
7.3	7.5	3.7	3.3	4.0	3.7	1.6	1.2	3.8	1.6	1.2	5.9	2.2	2.9	4.4	8+1	2.9	1/4	4.3	1.8	2.5	3.1	5+1	2.4	4/4	9
7.9	8.1	4.0	3.1	4.4	3.8	1.8	1.2	3.8	1.7	1.2	6.5	2.5	3.4	4.7	5+1	3.2	2/3	4.9	1.8	2.8	3.5	4+1	2.8	3/4	8
8.6	8.5	4.3	3.5	5.0	4.1	1.8	1.2	4.2	1.8	1.3	6.7	2.6	3.5	5.1	9+2	3.3	2/4	5.0	2.0	2.7	3.6	5+1	2.7	3/5	9
8.6	8.8	4.4	4.3	4.9	4.2	1.8	1.2	4.1	1.8	1.2	7.0	2.5	3.4	5.2	8+2	3.3	4/4	5.3	2.0	2.9	4.1	7+2	3.2	4/4	10
9.9	9.8	4.8	4.7	5.8	4.6	2.1	1.4	4.8	2.1	1.4	7.9	2.9	4.0	5.7	6+2	3.8	4/4	5.7	2.3	3.1	4.3	6+0	3.3	3/5	9
12.7	12.5	6.4	8.8	8.1	6.5	2.9	2.0	6.3	2.8	1.9	9.8	3.7	5.1	7.6	10+2	4.7	2/3	7.4	3.0	4.3	5.4	5+2	4.2	4/7	9
13.0	13.0	6.6	8.8	7.4	6.4	3.0	2.0	6.6	3.2	2.0	8.7	3.0	4.7	6.9	6+2	4.7	3/4	7.5	2.7	4.4	5.2	8+0	4.2	3/6	11
16.9	16.5	8.4	12.2	11.2	8.8	4.4	2.9	9.2	4.1	2.9	13.3	4.8	6.5	10.7	12+3	6.3	3/4	11.0	4.4	6.3	8.1	9+2	6.0	5/6	6
17.0	16.9	8.5	12.6	11.9	8.7	4.3	2.7	8.6	4.3	2.8	12.5	5.0	6.8	9.6	11+2	6.0	6/5	9.7	4.0	5.8	7.6	9+3	5.8	6/7	9
18.1	17.8	8.7	13.8	12.4	9.4	4.6	2.9	9.5	4.5	3.0	13.0	5.2	6.7	10.2	11+2	5.5	5/5	10.8	4.3	6.2	7.9	9+2	5.8	6/7	9

Habitat: *Sesarma angustum* is common in and on the banks of freshwater coastal streams, especially on islands. It was not collected more than 100 m upstream from the mouth of any stream.

Remarks: Type-materials of both *S. angustum* and *S. ophioderma* were examined during the present study. Nobili (1901) placed *S. ophioderma* in the subgenus *Sesarma* because of the presence of 2 small lobes posterior to the outer orbital angle. Nobili's statement on this character led Rathbun (1918) also to place *ophioderma* in the subgenus *Sesarma*. The presence of anterolateral lobes plus Nobili's statement that the length and breadth of the carapace are subequal has led to the difficulty in identifying this species. However, as Holthuis (1954) noted, there are anterolateral lobes present on *S. angustum*. They are somewhat variable in their development but they are quite distinct in smaller individuals. In addition, smaller specimens, especially females (Table 2), tend to have the carapace length and breadth subequal. Thus, based on the characters just mentioned and comparison of a series of specimens, it is concluded that *Sesarma ophioderma* Nobili is a junior synonym of *S. angustum* Smith.

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